PATENT COOPERATION TREATY
PCT
INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 12563PC2-ERG/HMG	FOR FURTHER ACTION	See Form PCT/IPEA/416

International application No. **PCT/AU2004/001377**	International filing date *(day/month/year)* 8 October 2004	Priority date *(day/month/year)* 9 October 2003

International Patent Classification (IPC) or national classification and IPC

Int. Cl. [7]   G08B 23/00, G08B 13/18, G08B 13/189, H04N 7/18

Applicant

    MORETON BAY SYSTEMS et al

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1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 3   sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

   a. [X] *(sent to the applicant and to the International Bureau)* a total of   4   sheets, as follows:

   > [X] sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

   > [ ] sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

   b. [ ] *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s))   , containing a sequence listing and/or table related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

   [X] Box No. I   Basis of the report

   [ ] Box No. II   Priority

   [ ] Box No. III   Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

   [ ] Box No. IV   Lack of unity of invention

   [X] Box No. V   Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

   [ ] Box No. VI   Certain documents cited

   [ ] Box No. VII   Certain defects in the international application

   [ ] Box No. VIII   Certain observations on the international application

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Date of submission of the demand 6 January 2005	Date of completion of the report 30 August 2005
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer **Andrea Hadley** Telephone No. (02) 6283 2222

Box No. I	Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language   , which is the language of a translation furnished for the purposes of:

☐ international search (under Rules 12.3 and 23.1 (b))

☐ publication of the international application (under Rule 12.4)

☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

☐ the international application as originally filed/furnished

☒ the description:

pages   **1-17** as originally filed/furnished

pages*   received by this Authority on . with the letter of

pages*   received by this Authority on   with the letter of

☒ the claims:

pages   as originally filed/furnished

pages*   as amended (together with any statement) under Article 19

pages*   **18-21** received by this Authority on **6 January 2005** with the letter of the same

pages*   received by this Authority on   with the letter of

☒ the drawings:

pages **1-9** as originally filed/furnished

pages*   received by this Authority on   with the letter of

pages*   received by this Authority on   with the letter of

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages

☐ the claims, Nos.

☐ the drawings, sheets/figs

☐ the sequence listing (*specify*):

☐ any table(s) related to the sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages

☐ the claims, Nos.

☐ the drawings, sheets/figs

☐ the sequence listing (*specify*):

☐ any table(s) related to the sequence listing (*specify*):

*   *If item 4 applies, some or all of those sheets may be marked "superseded."*

Box No. V   Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims **1-19**	**YES**
	Claims	**NO**
Inventive step (IS)	Claims **1-19**	**YES**
	Claims	**NO**
Industrial applicability (IA)	Claims **1-19**	**YES**
	Claims	**NO**

2. Citations and explanations (Rule 70.7)

   <u>Novelty (N) and Inventive Step (IS): Claims 1-19:</u>

   The following documents were cited in the ISR:

   (a) US 6476858 B1 (RAMIREZ DIAZ et al.) 5 November 2002

   (b) CA 2242322 C (SILENT WITNESS ENTERPRISES LTD., CA) 23 October 2001.

   Document (a) represents the closest prior art to the invention defined by the claims. However this document discloses the use of video cameras rather than digital still cameras as defined by the claims. The Applicant has stated that this is a significant difference as the digital still cameras of the invention are simpler and require much less power than typical prior art video camera systems.

   Document (b) is relevant to the art, but does not disclose the invention.

   Therefore, the invention defined by claims 1 to 19 is novel and inventive when considered in the light of the cited prior art.

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Response to Written Opinion Mailed 15 December 2004
Clean copy of claims

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CLEAN COPY OF CLAIMS

CLAIMS:

1. An image monitoring system comprising:

a central controller; and

a plurality of digital still camera units operatively connected to the central controller, wherein at least one of the camera units comprises

an image sensor;

a motion detector operatively connected to the image sensor that causes the image sensor to receive image data when motion is detected;

a micro controller operatively connected to the image sensor and to the motion detector;

a first nonvolatile memory operatively connected to or included in the micro controller; and

computer readable program code stored on the first memory for causing the micro controller to determine whether the received image data should be transmitted to the central controller, wherein the central controller then determines whether the received image data should be transmitted to a monitoring station.

2. The image monitoring system of claim 1, wherein the plurality of camera units transmit image data wirelessly to the central controller.

3. The image monitoring system of claim 2, wherein the central controller further comprises a mesh networking protocol enabling image data to be routed indirectly and wirelessly through one or more of the camera units to the central controller.

4. The image monitoring system of claim 1, wherein at least one of the camera units further comprises a microphone.

5. The image monitoring system of claim 1, wherein at least one of the camera units further comprises both a colour and a black and white image

sensor to improve low-light sensitivity, wherein both image sensors are operatively connected to a single high-speed DMA bus.

6.   The image monitoring system of claim 1, wherein at least one of the camera units is battery operated and comprises direct memory access circuitry between an image sensor and a second nonvolatile memory.

7.   The image monitoring system of claim 1, wherein at least one of the camera units includes a pre-trigger feature that, following a detection of motion by the motion detector, transmits to the central controller a series of buffered images captured before the detection of motion.

8.   The image monitoring system of claim 1, wherein the monitoring station forms a component of the image monitoring system, and wherein the monitoring station includes human personnel who further analyze the images to determine whether an alarm should be sent to an authority.

9.   A method for image monitoring using a plurality of digital still camera units operatively connected to each other and to a central controller using wireless communications, the method comprising the steps of:
     detecting motion of a moving object using a motion detector included in at least one of the camera units;
     triggering, following the detection of motion of the moving object, an image sensor included in at least one of the camera units to receive an image of the moving object;
     determining whether the received image should be transmitted wirelessly to the central controller by analyzing the image using a micro controller included in at least one of the camera units and operatively connected to the image sensor; and
     determining whether any images received at the central controller from at least one of the camera units should be transmitted to a monitoring station.

10.   The method for image monitoring of claim 9, wherein the central

controller further comprises a mesh networking protocol enabling image data to be routed indirectly and wirelessly through one or more of the camera units to the central controller.

11. The method for image monitoring of claim 9, further comprising the step of storing images received by the image sensor in a memory unit of a camera unit using direct memory access.

12. The method for image monitoring of claim 9, wherein the step of triggering an image sensor comprises triggering a black and white image sensor in low light conditions, and otherwise triggering a colour image sensor, wherein at least one camera unit includes both the colour image sensor and the black and white image sensor operatively connected to a single high-speed DMA bus.

13. The method for image monitoring of claim 9, further comprising a pre-trigger feature including the steps of:

continuously receiving images from the image sensor;

storing the received images in a memory buffer of at least one camera unit; and

following a detection of motion by the motion detector, transmitting to the central controller a series of the stored images received before the detection of motion.

14. A camera unit for image monitoring comprising:

an image sensor;

a motion detector operatively connected to the image sensor that causes the image sensor to receive image data when motion is detected;

a micro controller operatively connected to both the image sensor and the motion detector;

first and second nonvolatile memories operatively connected to the micro controller;

a random access memory operatively connected to the micro controller

and, through a high-speed DMA bus, to the image sensor; and

computer readable program code stored in the first nonvolatile memory for causing the micro controller to transfer received image data directly from the image sensor to the second nonvolatile memory over the high-speed DMA bus.

15. The camera unit of claim 14, wherein the second nonvolatile memory is a removable flash memory card.

16. The camera unit of claim 14, further comprising a battery for supplying power to the unit.

17. The camera unit of claim 14, further comprising an electrical interface operatively connected to the motion detector, wherein the interface is adapted to receive a passive PIR motion detector connector from a security alarm system, wherein the camera unit replaces a passive PIR motion detector of the security alarm system.

18. The camera unit of claim 14, wherein the second nonvolatile memory includes a settings file, whereby when the second nonvolatile memory is removed from the camera unit and inserted into a reader connected to a computer, a setup software program on the computer enables configuration of camera unit features, which features are then loaded into the camera unit when the second nonvolatile memory is re-inserted into the camera unit.

19. The camera unit of claim 18, wherein at least one of the camera unit features is selected from the group consisting of time and date stamping, erasing image data, image sequencing, image resolution, time lapse mode, pre-trigger mode, scheduler, encryption/decryption, image capture on arm/disarm, text overlay, enable LED, enable motion sensor, and relay output polarity.